FORUM

CEAP: Right Idea, Right Time

In the 2002 Farm Bill, the U.S. Congress authorized spending $6 billion on farm conservation programs over a 5-year period. Now Congress and the Office of Management and Budget are asking the U.S. Department of Agriculture for a scientific assessment of the effects and/or benefits of these programs.

For example, did this expenditure give us $6 billion worth of environmental improvement and more profitable farming? Was this money spent as efficiently as possible, and did its spending really make a difference?

We're going to answer these questions—and gain more opportunities for innovative science—through the Conservation Effects Assessment Project (CEAP), described in the article on page 4. This is the first-ever attempt at a nationwide scientific evaluation of the results of 50 years of conservation efforts.

At the heart of CEAP is balancing tradeoffs among three often-competing national goals: environmental quality, starting with water quality; farmer profits; and efficiency of conservation practices. Ultimately, CEAP findings could force us to see conservation in a new light, help us make hard choices among these competing goals, and make a compelling argument for long-term research.

For ARS's part, we're doing in-house research at 12 ARS watersheds across the country where, among other things, we're developing databases from the output of computer models. USDA's Natural Resources Conservation Service (NRCS) and others involved in natural resource management will use the databases to balance competing goals based on how much weight they decide to give each one. Only then can they determine the costs and benefits of meeting those goals.

The ARS databases will give policymakers science-based facts and figures for truer measurement of conservation's costs and benefits. This will enable everyone at USDA to measure the value of what's been done in the past and to look towards what can be done in the future. The emphasis is on improving future practices and their implementation—such as where to apply them—so they'll work even better when funded by future farm bills.

A CEAP economic assessment team convened this past summer at the ARS watershed in Fort Wayne, Indiana, to plan the execution of the economic assessment part of CEAP, and it will meet again in early 2006.

The economic assessment will begin at the Fort Wayne watershed and at two other ARS watersheds—in Ohio and New York—because each drains into a major drinking water reservoir. Purdue, Ohio State, and Pennsylvania State universities are working with us on this assessment, along with economists from USDA's Economic Research Service (ERS). Penn State and Purdue have already designed farm-survey forms, and Purdue has developed an economic assessment computer model.

Agricultural scientists and economists struggle not only with assigning cash register "market values" to environmental damages and cures, but also with scientifically linking a farmer's change in practices to environmental harm or benefit. Even if we figure out how to convince farmers to adopt a practice to reduce water pollution or soil loss, how do we later prove that it actually benefited the water or land? ARS is finding that CEAP continues to open doors for "new" partnerships. Agencies such as NRCS, ERS, the U.S. Geological Survey, the U.S. Environmental Protection Agency, and others are working closer together to apply science to conservation practices, for the benefit not only of farmers but society at large.

NRCS and ARS customarily evaluate the effects of individual practices on a farm or small-plot research scale. Rarely do we attempt to measure effects on large areas surrounding those farms after the technology has been transferred to farmers.

That's what makes CEAP such a radical departure. It requires us to go out into the larger world and measure the effects of farm conservation practices on vast landscapes across the country.

A natural outgrowth of the increasing call for accountability by the past three presidential administrations, through various programs, CEAP demands scientific answers to those three competing goals: environmental protection, farmer profits, and finding more efficient practices.

Completing a meaningful measurement of the effects of conservation programs is crucial to those of us involved in resource conservation and protection. It's only natural that a portion of any program's budget be set aside for self-evaluation, for it's the only way we can ensure that taxpayers' money is well spent.

This self-evaluation will answer many essential questions. For example, what causes farmers to change? What are the practices that work best within specific watersheds and regions? What's the value of a wilderness area, or the cost to a farmer in anxiety when switching to a new practice? Are farmers willing to adopt or even develop other, more sophisticated practices? Will scientists find better solutions that are less costly?

With the aid of agricultural scientists, we'll wrestle with all these questions, and our answers will be both realistic and scientific. The first CEAP annual report goes to Congress in 2006.

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